

### ABSTRACT

A surface structure for contacting a workpiece includes a flexible layer adhered to a support element and a coating on the flexible layer. The coating has ripples on its surface. The flexible layer may be thermally conductive. The ripples on the surface enhance thermal transfer from the workpiece and are characterized by low particle generation and low particulate contamination of the workpiece. The ripples in the coating may be formed by expanding the flexible layer, applying the coating to the expanded flexible layer and then contracting the flexible layer. In one application, the surface structure is utilized in an electrostatic wafer clamp. The surface structure provides high efficiency thermal transfer in a vacuum processing system when utilized in conjunction with a low pressure cooling gas between the workpiece and the surface structure.